

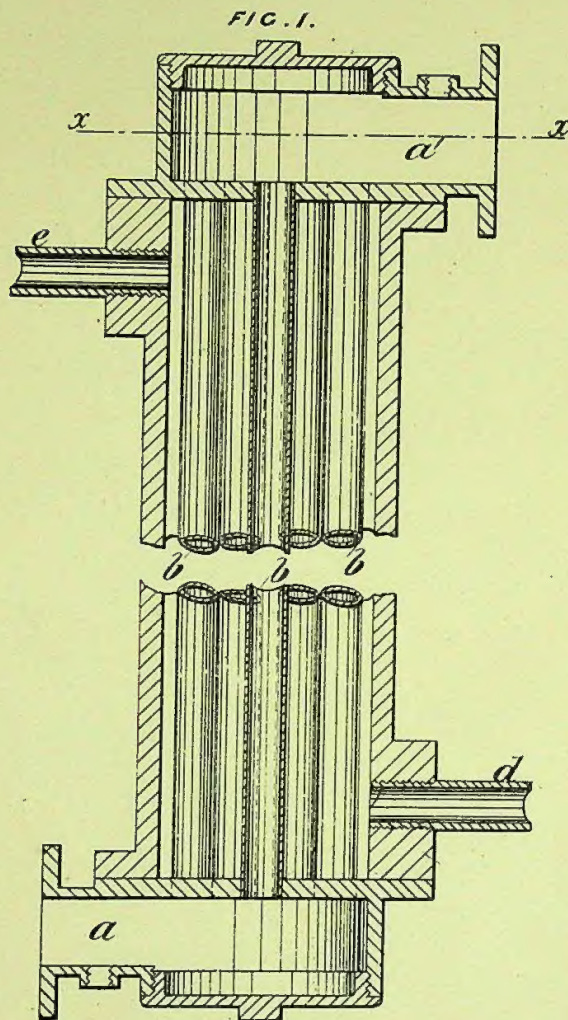
95. ALCOHOL.  
Mashing-  
Apparatus-  
Mash-tubs.

1516  
of 1887

A.D. 1887. JAN. 31. N<sup>o</sup> 1516.

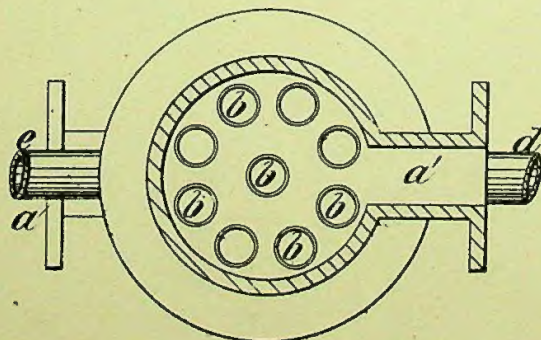
ADLAM & FAULKNER'S COMPLETE SPECIFICATION.

(1 SHEET)



*Mashing*

FIG. 2.



[This Drawing is a reproduction of the Original on a reduced scale]



5/ 1887  
al q q ①

Date of Application, 31st Jan., 1887  
Complete Left, 28th Oct., 1887  
Complete Accepted, 29th Nov., 1887

RECORDED

Mashing

A.D. 1887, 31st JANUARY. N° 1516.

PROVISIONAL SPECIFICATION.

Improvements in Treating Brewers' Wort and Apparatus therefor.

We, WILLIAM ADLAM, of Wier and Ellbroad Street, in the city and county of Bristol, engineer, and FRANK FAULKNER, of Crosswells Brewery, Oldbury, in the county of Worcester, consulting brewer, do hereby declare the nature of this invention to be as follows:—

- 5 This invention consists in treating brewers' wort, by means of specially designed apparatus, in such manner that the general quality of the wort is thereby improved and an increased proportion of dextrine results.
- In practically working this invention the wort from the mash tun is conducted to and made to circulate through a multitubular heating vessel in which, by means of
- 10 steam or other suitable heating agency, such wort is raised either to boiling point or may, indeed, be actually boiled. From this vessel the wort is conducted to a cooling vessel of substantially similar construction to the vessel first mentioned. In this second vessel the temperature of the circulating wort is reduced again, either through the agency of cold air or other suitable cooling agent, to the requisite degree of
- 15 temperature, the wort being then resparged on to the mash tun "goods."
- By thus subjecting the circulating wort to distinct ebullition, again cooling to a temperature suitable for sparging, and subsequently bringing such treated wort under the influence of the active principles of malt extract still present in the mash tun
- 20 "goods," the general quality is modified and improved in character, while the proportion of dextrine is materially increased.
- The process may be described as decoction of wort as distinct from decoction of mash.

Dated this 31st day of January 1887.

25

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Agent for the Applicants.

[Price 8d.]



## COMPLETE SPECIFICATION.

## Improvements in Treating Brewers' Wort and Apparatus therefor.

We, WILLIAM ADLAM, of Weir and Ellbroad Street, in the city and county of Bristol, engineer, and FRANK FAULKNER, of Crosswells Brewery, Oldbury, in the county of Worcester, consulting brewer, do hereby declare the nature of this invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:— 5

This invention consists in treating brewers' wort in specially designed apparatus in such manner that the general quality of the wort is improved and an increased proportion of dextrine results.

According to this invention the wort from the mash tun is conducted to and made to pass through the tubes of a multitubular vessel. Steam or other suitable heating agent is admitted to the vessel and surrounds the tubes through which the wort is flowing. The wort is thus heated to boiling point or may, indeed, be actually boiled. From this vessel the wort is conducted to a cooling vessel of similar construction to the vessel first mentioned. 10

In the second vessel the temperature of the wort is reduced and when cooled to the required degree (185° to 165° F.) the wort is re-sparged on to the "goods" in the mash tun. 15

Referring to the accompanying drawing, Fig. 1 thereon represents a vertical section of a multitubular vessel constructed and arranged for heating or cooling brewers' wort in accordance with this invention. Fig. 2 is a transverse section on the line *x x*, Fig. 1. 20

In the employment of the vessel for heating wort the wort is forced by the passage *a* into the tubes *b* and passes out therefrom by the passage *a*<sup>1</sup> at the top. In its passage through the tubes *b* of the vessel the wort is heated by means of steam or other heating agent which is admitted by the pipe *d* and surrounds the said tubes. The wort is thus heated to boiling point or actually boiled. The heating agent passes out at the top by the pipe *e*. 25

The wort is conducted from this vessel to a similar vessel and as it passes through the tubes thereof its temperature is reduced by means of cold air or other cooling agent which passes through the vessel in the same way as hereinbefore described with reference to the passage of steam or other heating agent. When thus cooled to the requisite degree the wort is re-sparged on to the "goods" in the mash tun. 30

By thus subjecting the circulating wort to distinct ebullition, again cooling to a temperature suitable for sparging and subsequently bringing such wort under the influence of the active principle of malt extract still present in the mash tun "goods," the general quality of the wort is modified and improved in character and the proportion of dextrine resulting is materially increased. 35



*Adlam & Faulkner's Improvements in Treating Brewers' Wort and Apparatus therefor.*

Having now particularly described and ascertained the nature of this invention, and in what manner the same is to be performed, we declare that what we claim is:—

- 5 1. An improved process of treating mash tun wort by subjecting the same to distinct ebullition, again cooling the same to a suitable temperature for resparging and thereafter resparging the wort on the "goods" in the mash tun, substantially as herein above described.
- 10 2. The use for heating brewers' wort, of a multitubular vessel through the tubes in which the wort is made to pass and in which it is raised to the required temperature by means of steam or other heating agent admitted to the said vessel and having access to the exterior of the said tubes, substantially as herein above described.
3. The use for cooling brewers' wort, of a multitubular vessel through the tubes of which the wort is made to pass and in which it is lowered to the required temperature by means of cold air or other cooling agent admitted to the said vessel and having access to the exterior of such tubes, substantially as herein above described.

15 Dated this 28th day of October 1887.

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Agent for the Applicants.

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